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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,092	03/30/2004	Kazuyoshi Mizutani	Q80752	3094

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EXAMINER

HAMILTON, CYNTHIA

ART UNIT PAPER NUMBER

1752

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/812,092	MIZUTANI ET AL.	
	Examiner	Art Unit	
	Cynthia Hamilton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/6/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In order to reach a clearly defined issue for a fully developed examination in this application, the examiner withdraws the finality of the last Office action mailed October 11, 2005. This is done to add Flanagan et al to the rejection at issue to clarify what is the understanding of the ordinary worker in the art at issue with respect to polydispersity, image profile and line edge roughness. The examiner notes now that Flanagan et al cite Tsiartas et al that is already of record.
2. Claims 1 and 4-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toru et al (JP 2002-49156) as evidenced by the machine assisted translation by THOMSON dated 2/21/2005 in view of Aoai et al (5,837,420) optionally further in view of Flanagan et al (J. Vac. Sci. Technol.). With respect to instant claims 1 and 4-15, Toru et al teach all of the instant invention with the exception of that the polymer used needs to have a molecular weight dispersion degree of 1.5 or below. Aoai et al teach for similar positive working photosensitive compositions that the dispersion degree be particularly 1.0 to 1.6 with the smaller the dispersion degree of a resin being the better heat resistance and image forming characteristics such as pattern profile, defocus latitude, etc. the resin can provide. In Aoai et al, see particularly the paragraph bridging col. 38-39. The smallest number polydispersity can be is 1.0 for this is the perfect situation wherein $M_w=M_n$ and all the polymer chains are essentially the same length. Thus, with respect to instant claims 1 and 4-15, the formation of the polymers of Toru et al with a polydispersity as close to 1.0 as possible would be prima facie obvious in view of Aoai et al teaching the desire to improve heat resistance and image forming characteristics by doing so. In THOMSON, see particularly 3/96, 4/96, 9/96, 10/96, 11/96, 18/96 to 21/96, 39/96 to 44/96 for

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polymer formulas and examples. That line edge roughness would be expected to be reduced as part of improving the image profile because a smaller polydispersity would have been understood by a worker of ordinary skill in the art when dealing with polyvinylphenol resists as taught by Flanagan et al. See page 1376, B. Effect of polydispersity and what formulators of resists recognize which is the higher the polydispersity the greater the degree of surface roughness. Thus, even if Aoi et al did not mention a reduction in line edge roughness with respect to reduction in polydispersity, a worker of ordinary skill in the photoresist formulation art would have understood the improvement of image profile to include less line edge roughness as well with decreasing polydispersity as explained by Flanagan et al.

3. Applicant's arguments filed 17 June 2005 have been fully considered but they are not persuasive. In response to applicant's argument that Toru et al do not solve the same problem as they do, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

4. The Declaration under 37 CFR 1.132 filed February 3, 2006 is insufficient to overcome the rejection of claims 1 and 4-15 based upon Toru et al (JP 2002-49156) as evidenced by the machine assisted translation by THOMSON dated 2/21/2005 in view of Aoi et al (5,837,420) as set forth in the last Office action because: In response to applicant's argument that Toru et al do not solve the same problem as they do, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be

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the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

5. The Declaration under 37 CFR 1.132 filed February 3, 2006 is insufficient to overcome the rejection of claims 1 and 4-15 based upon Toru et al (JP 2002-49156) as evidenced by the machine assisted translation by THOMSON dated 2/21/2005 in view of Aoi et al (5,837,420) in view of Flanagan et al (J. Vac. Sci. Technol.) as set forth in this Office action because: The showing made by the applicant would have been expected by a worker of ordinary skill in the art when reduction in polydispersity in the photoresists of Toru et al was made because Aoi et al pointed to improved image profile and Flanagan et al evidences the skill level in the photoresist formulation art which would lead a worker of skill in the art to expect such a result to occur as was shown by Mr. Mizutani :

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-1331.

The examiner can normally be reached on Monday through Friday 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571) 272-0729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


**CYNTHIA HAMILTON
PRIMARY EXAMINER**

Cynthia Hamilton
Primary Examiner
Art Unit 1752

February 21, 2006